

Si-W Forward Calorimeters

(Nosecone Calorimeter “NCC”)

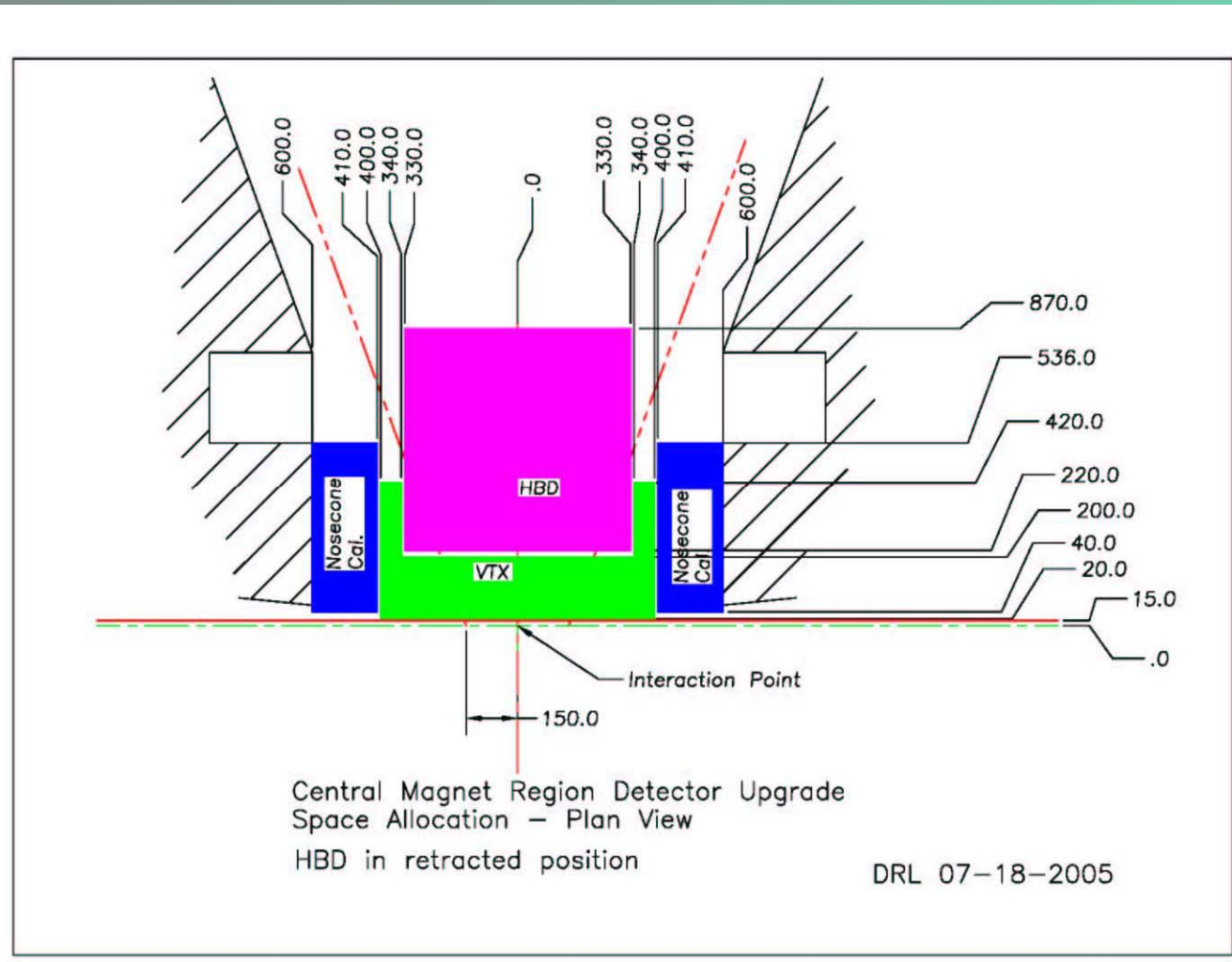
Mechanical System & Integration

Don Lynch

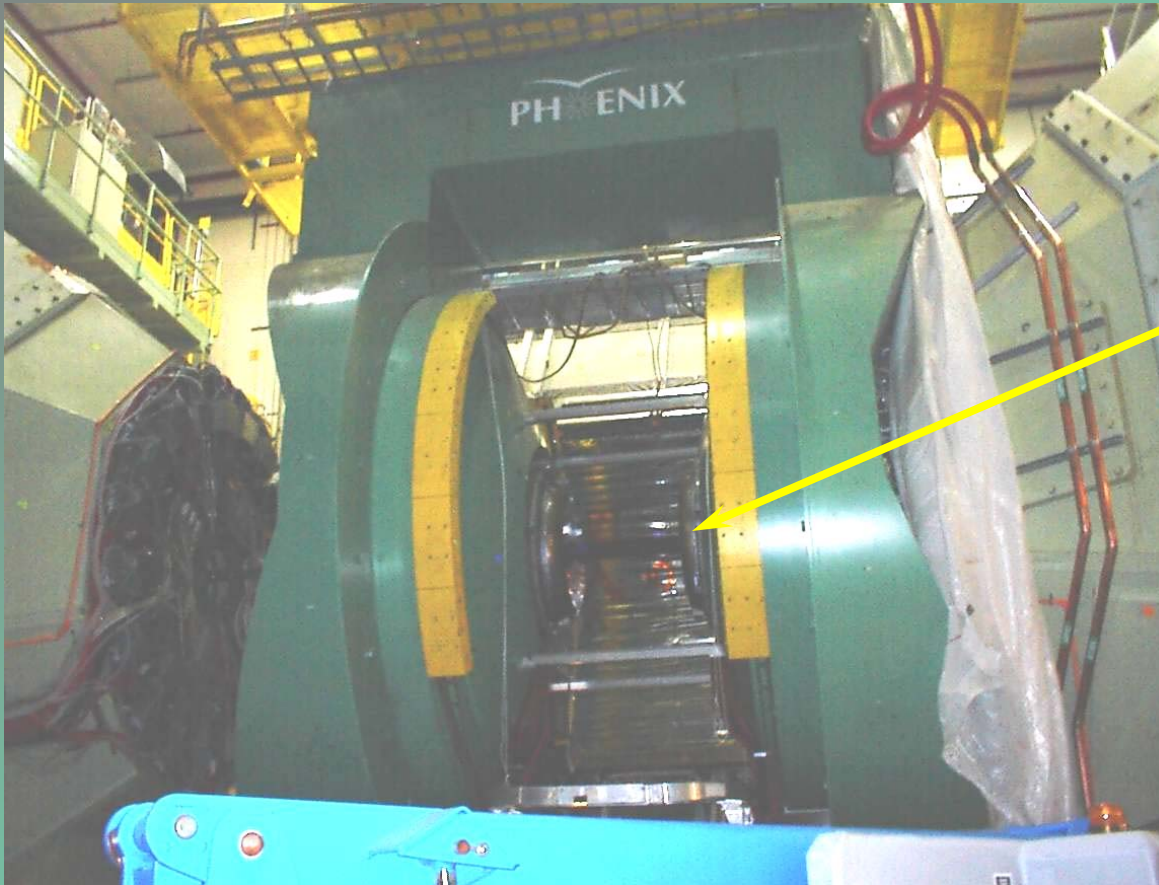
NCC Detector Mechanical Tasks

- Define space allocation - BNL
- Detector module mechanical design - FNAL
- Internal structural support/assembly - FNAL
- Detector Fabrication - JINR
- External mechanical/structural support - BNL
- Services (cables, cooling, etc.) - BNL
- Installation/alignment concept and logistical support - BNL

CM Region Space Allocation



Current CM Region

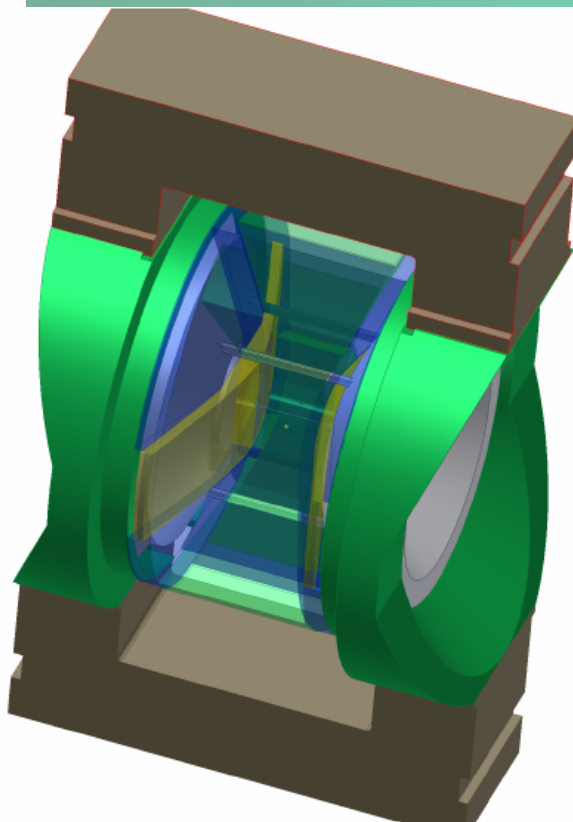
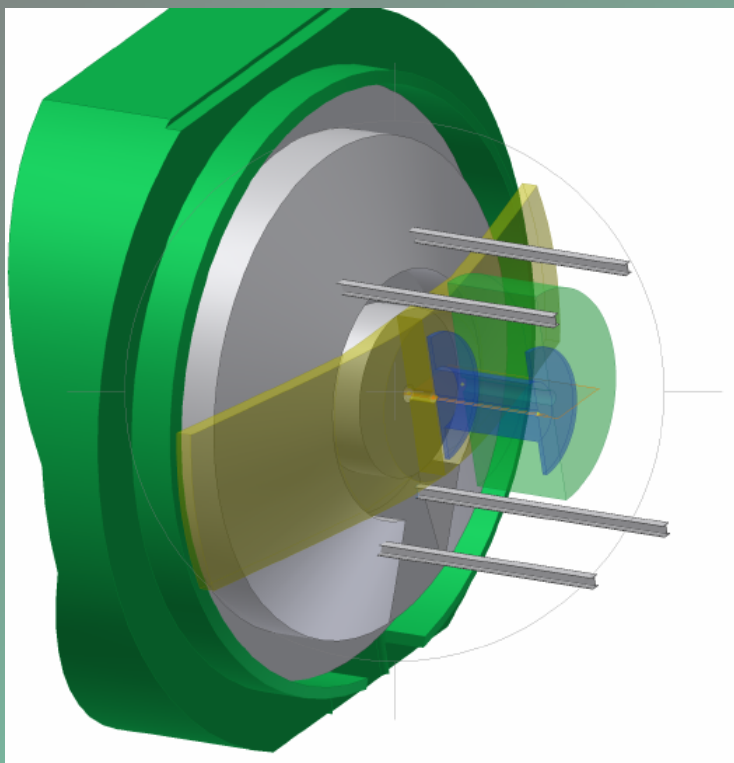


NCC, HBD, VTX and FVTX detector upgrades will all be installed in this area.

They are being designed to cooperatively divide the space so that each detector does not interfere with the other detectors during any of the installation periods nor during operation.

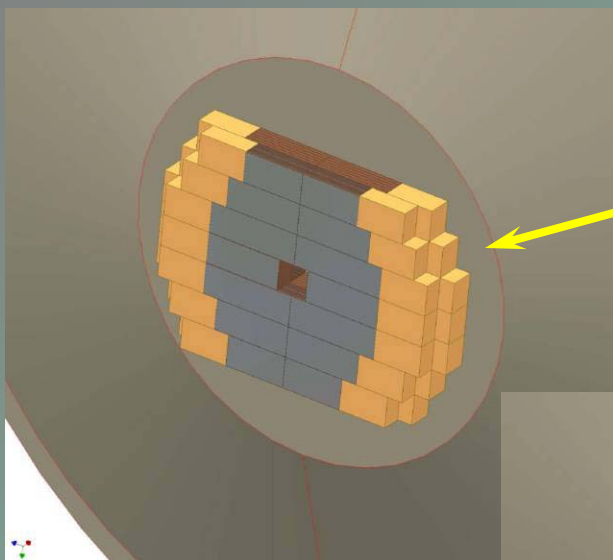
The infrastructure support and utilities plans for the detectors are coordinated so that each detector benefits (where possible) from efforts in support of its neighbors.

CM Region 3D Space Allocation



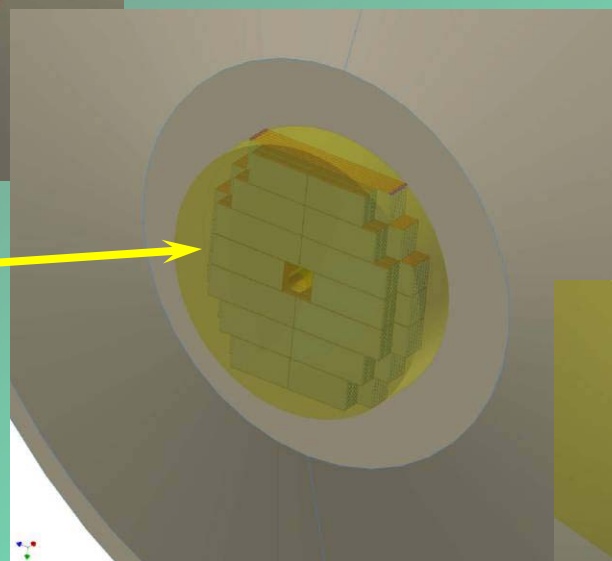
All space in between the CM poles to a radius of 2 meters from the nominal beam centerline has been (or will be) apportioned to the north and south NCC, east and west HBD and east and west VTX/FVTX detectors, with allowances for common support infrastructure

Groups working on the HBD, VTX, FVTX and NCC have been coordinating space allocation on a regular basis.

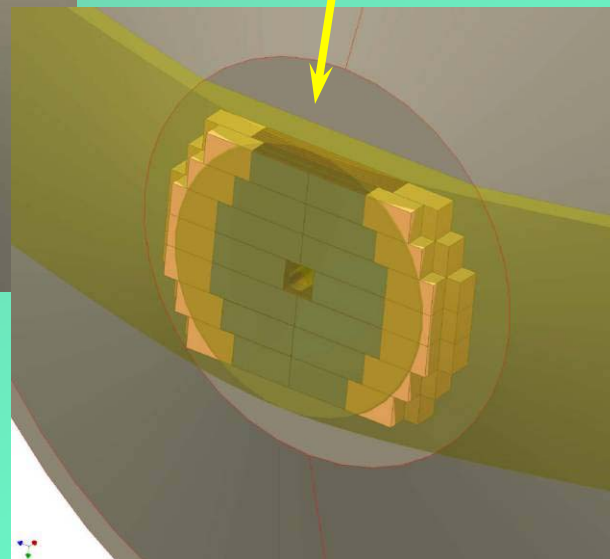


NCC with electronics allowances
On magnet pole envelope

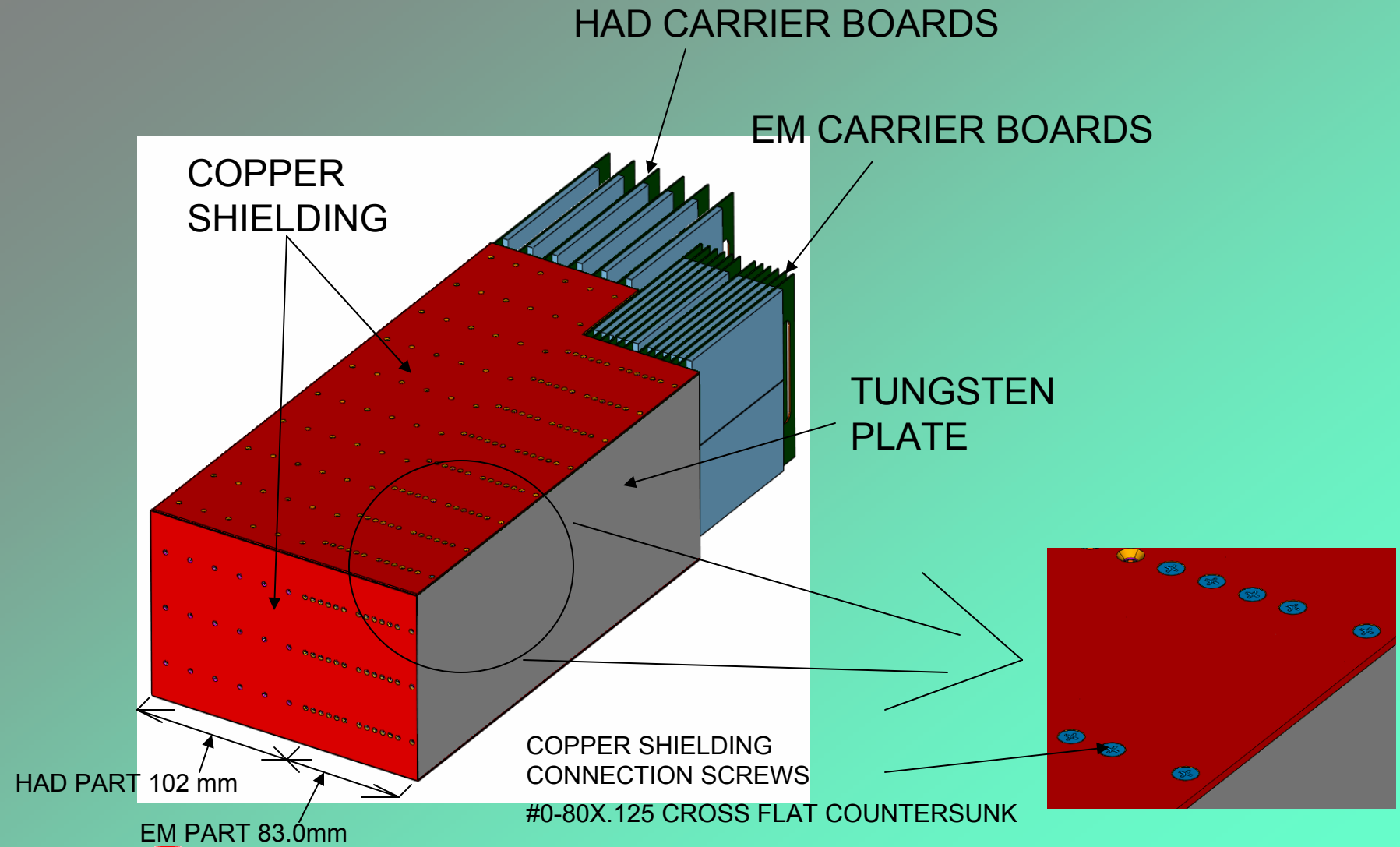
NCC Detector modules fit
into basic NCC envelope
allowance



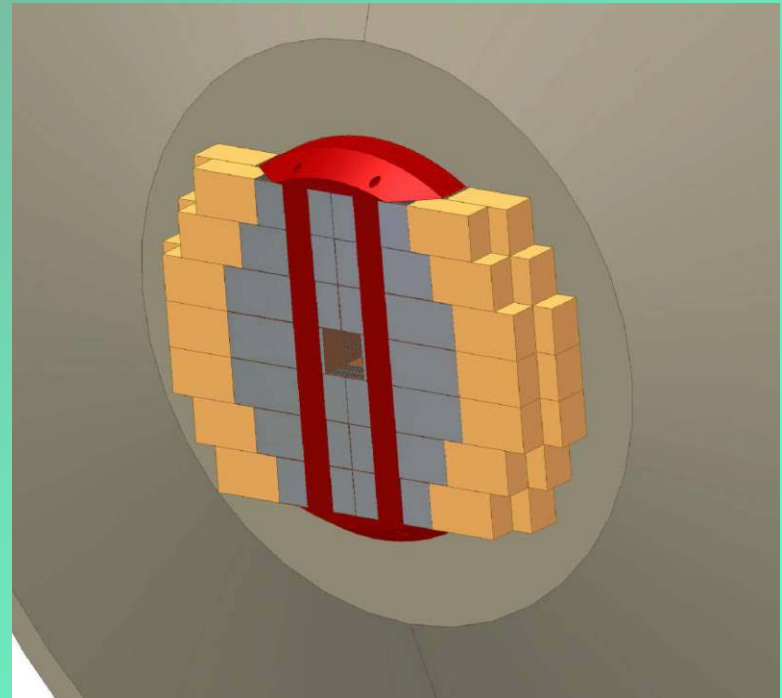
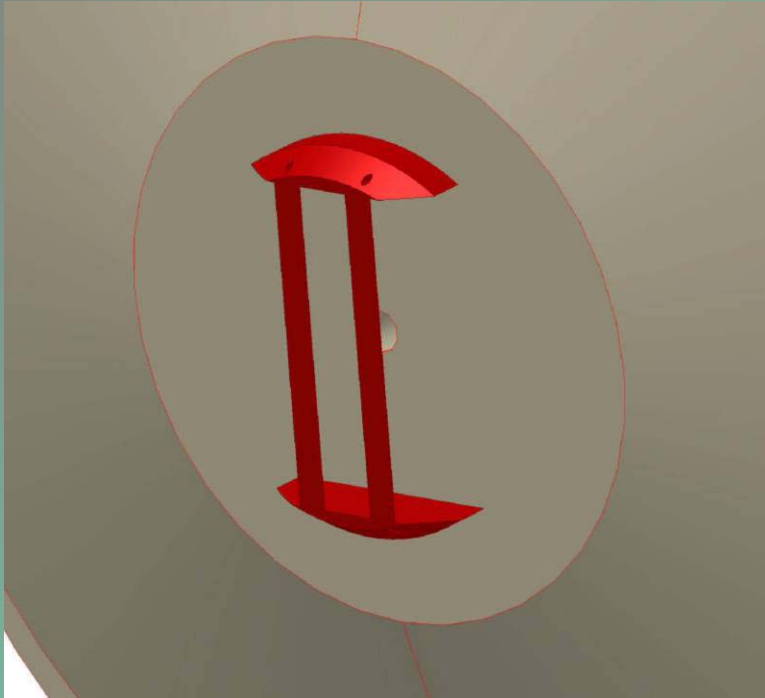
NCC with electronics
allowances fit into
extended NCC envelope
allowance



NCC MODULE ASSY (PROPOSAL)



Mechanical Support Concept



Bridge Utilities

Bridge water manifolds and cable trays



Bridge elect.
distribution
and
disconnect

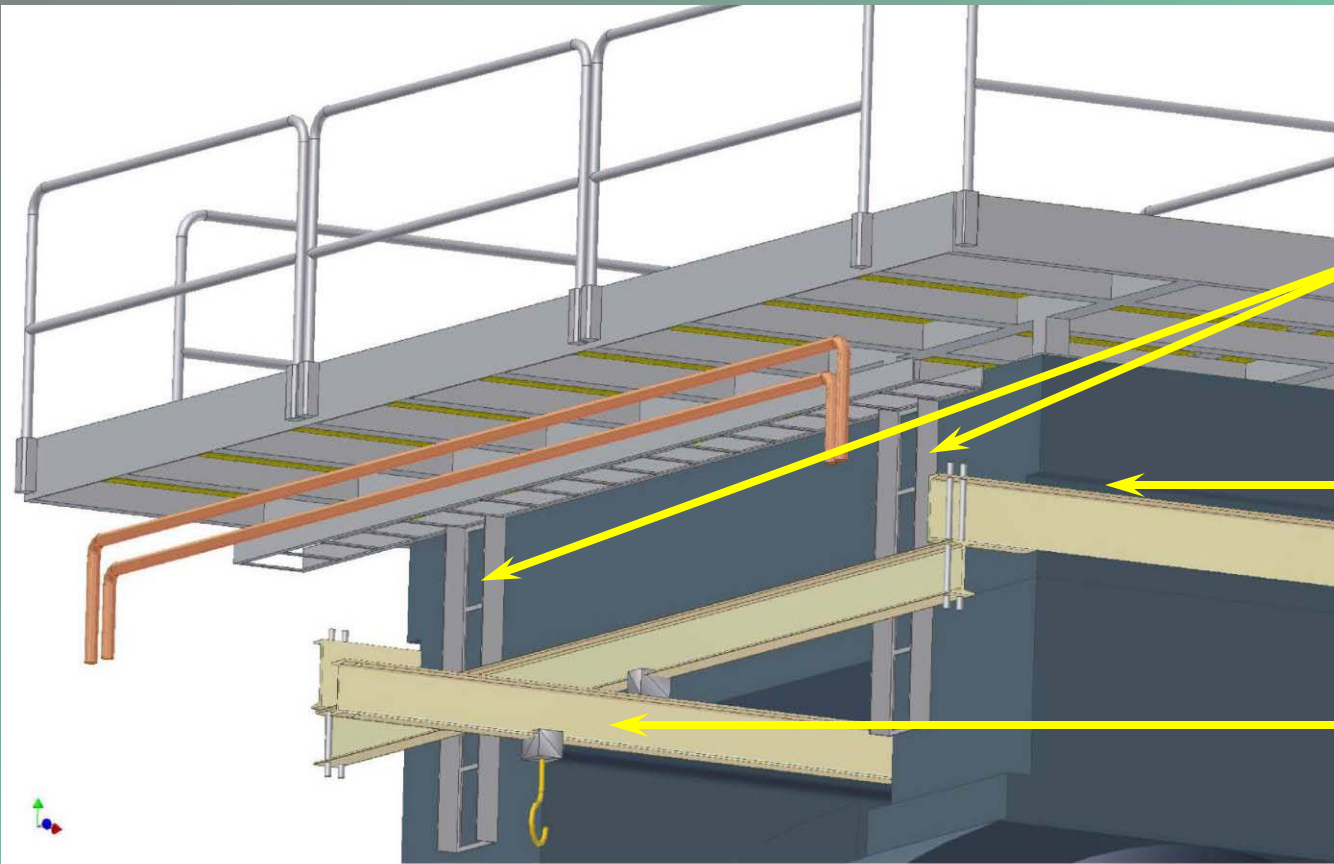


Bridge water
supply &
return
flexible
connections



Bridge and utilities
efforts will serve all
central region
detector upgrades

CM Region Crane and Cable Routing Concept



Cable Trays to route cables NCC Detector from Bridge

Crane Supports use existing flux return notches

CM Crane north-south & east-west motions; extended travel east to existing crane coverage

NCC Mechanical Efforts Current Status

- General efforts for CM region (all at BNL)
 - Space allocation concept in place
 - CM platform extensions done
 - Crane design underway
 - Bridge utilities installed
 - Cable routing concept underway
- NCC Specific efforts
 - Space allocation defined (BNL)
 - Alignment, positioning tolerance, precision and repeatability defined (BNL)
 - Structural support concept specified (BNL/FNAL)
 - Mechanical design concept progressing (FNAL)